

# Polkadot JS & Subql

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# Introduction



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Chain is ready

What's Next Stop of our Journey ?

A: Build your DAPP

# Assignment 5 Kitty NFT

<https://github.com/SubstrateDevAcademy/assignment-5-template>

Source code can be found

<https://github.com/OnFinality-io/substrate-acad-workshop-polkadot-js>



# Connect to your chain

1. Type definitions
2. Metadata
3. Generation Interfaces
4. Init ApiPromise with types

More

1. Metadata cache
2. Extend derives

# Query Basic Chain Informations

Chain Name	<code>api.runtimeChain</code>
Genesis block	<code>api.genesisHash</code>
Block time	<code>api.consts.babe.expectedBlockTime</code>
RuntimeVersion	<code>api.runtimeVersion</code>

## Node Informations

Peers	<code>api.rpc.system.peers()</code>
Network	<code>api.rpc.system.networkState()</code>
Node Role	<code>api.rpc.system.nodeRoles()</code>
Health	<code>api.rpc.system.health()</code>



# More

api.rpc.\* - Low-level methods  
api.derive.\* - Cookbook

## api.tx.\* - Submit Transaction

Need to use a signer,

On browsers, can use polkadot-extension

On mobile, you might need to implement your own.



# Signer & PolkadotJS Chrome Extension

[see signer.js]

# Query Kittens

1. Direct storage query
2. Derived queries
3. Indexed queries - Subquery <sup>TM</sup>



## api.query.\* - Storage queries

Some tips (api.query.\*.\*):

- # query historical states

  - .at(hash: Hash, arg1?: Arg, arg2?: Arg)

- # get the storage key (not perform query)

  - .key(arg1?: Arg, arg2?: Arg)

- # batch query

  - .multi() [see multi.js]

# Subquery

supported by web3 foundation grants program

<https://github.com/subquery/subql>

<https://github.com/subquery/subql-examples>

<https://doc.subquery.network/>



Tips

Debug polkadot-api

```
env DEBUG=api-ws
```



## Multi Query

```
api.query.xxx.yyy.multi()  
api.queryMulti()
```

# RESOURCES

- <https://polkadot.js.org/docs/api>
- <https://polkadot.js.org/docs/substrate>



